

**What is claimed is:**

1. A radio communication system having a radio network controller, base stations and mobile stations, to perform multicast communication, wherein

5       the mobile station comprises a response signal transmitter configured to transmit a response signal including a group ID identifying a multicast group to the base station, the response signal responding to a control signal for the multicast group which the mobile station is joining in; and

10       the base station comprises a response signal transmitter configured to transmit at least one response signal to the radio network controller, the at least one response signal being selected from at least one response signal transmitted from mobile stations joining in the same multicast group.

15       2. A mobile station supporting multicast communication, the mobile station comprising:

20       a response signal transmitter configured to transmit a response signal including a group ID identifying a multicast group to a base station, the response signal responding to a control signal for the multicast group which the mobile station is joining in.

25       3. A base station supporting multicast communication, the base station comprising:

      a response signal transmitter configured to transmit at least one response signal to the radio network controller, the at least one response signal responding to a control signal for a multicast group and being selected from at least one response

signal transmitted from mobile stations joining in the same multicast group.

4. The base station according to claim 3, further  
5 comprising a response signal holder configured to hold the at least one response signal for a predetermined duration before transmitting the at least one response signal to the radio network controller.

10 5. The base station according to claim 3, further comprising a detector configured to detect a first reception of the at least one response signal transmitted from the mobile stations; and wherein

the response signal holder holds the at least one response  
15 signal for a predetermined duration after the first reception of the at least one response signal.

6. A radio communication system having a radio network controller, base stations and mobile stations, to perform  
20 multicast communication, wherein

the mobile station comprises a response signal transmitter configured to transmit a response signal including a group ID identifying a multicast group to the base station, the response signal responding to a control signal for the  
25 multicast group which the mobile station is joining in; and

the base station comprises:

a response signal counter configured to count the number of response signals transmitted from mobile stations joining in the same multicast group;

a judger configured to judge whether the counted number of response signals is more than a predetermined number or not; and

5 a response signal transmitter configured to transmit at least one response signal to the radio network controller, when the counted number of response signals is more than the predetermined number.

7. A base station supporting multicast communication, the  
10 base station comprising:

a response signal counter configured to count the number of response signals to a control signal for a multicast group, the response signals being transmitted from mobile stations joining in the same multicast group;

15 a judger configured to judge whether the counted number of response signals is more than a predetermined number or not;

a response signal transmitter configured to transmit at least one response signal to a radio network controller, when the counted number of response signals is more than the  
20 predetermined number.

8. The base station according to claim 7, wherein the response signal transmitter notifies that the counted number of response signals is more than the predetermined number,  
25 or the counted number of response signals to the radio network controller.

9. A radio network controller supporting multicast communication, the radio network controller comprising:

a receiver configured to receive response signals transmitted from base stations;

a extractor configured to extract information showing that the number of received response signals is more than a  
5 predetermined number from the received response signals; and

a radio controller configured to perform radio controlling in multicast communication in accordance with the extracted information.

10 10. A radio network controller supporting multicast communication, the radio network controller comprising:

a receiver configured to receive response signals transmitted from base stations;

a extractor configured to extract the number of received  
15 response signals from the received response signals; and

a radio controller configured to perform radio controlling in multicast communication in accordance with the extracted number of response signals.